

DEPARTMENT of ENVIRONMENTAL SERVICES  
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

|                            |   |
|----------------------------|---|
| Lake: BACK LAKE            | Lake Area (ha): 145.12                  |
| Town: PITTSBURG            | Maximum depth (m): 4.6                  |
| County: Coos               | Mean depth (m): 2.0                     |
| River Basin: Connecticut   | Volume (m <sup>3</sup> ): 2965500       |
| Latitude: 45°04'49" N      | Relative depth: 0.3                     |
| Longitude: 71°21'07" W     | Shore configuration: 1.41               |
| Elevation (ft): 1575       | Areal water load (m/yr): 1.18           |
| Shore length (m): 6000     | Flushing rate (yr <sup>-1</sup> ): 0.60 |
| Watershed area (ha): 310.8 | P retention coeff.: 0.88                |
| % watershed ponded: 0.0    | Lake type: natural w/dam                |

BIOLOGICAL:

|                                    |    | 5 February 1997    | 6 August 1996     |
|------------------------------------|----|--------------------|-------------------|
| DOM. PHYTOPLANKTON (% TOTAL)       | #1 | ASTERIONELLA 65%   | DINOBRYON 32%     |
|                                    | #2 | SYNURA 25%         | ANACYSTIS 32%     |
|                                    | #3 |                    | TABELLARIA 12%    |
| PHYTOPLANKTON ABUNDANCE (units/mL) |    |                    |                   |
| CHLOROPHYLL-A (µg/L)               |    |                    | 3.11              |
| DOM. ZOOPLANKTON (% TOTAL)         | #1 | NAUPLIUS LARVA 35% | ACANTHOCYSTIS 49% |
|                                    | #2 | KELLICOTTIA 29%    | ACTINOPHRYS 17%   |
|                                    | #3 | POLYARTHRA 15%     | POLYARTHRA 15%    |
| ROTIFERS/LITER                     |    | 26                 | 42                |
| MICROCRUSTACEA/LITER               |    | 21                 | 26                |
| ZOOPLANKTON ABUNDANCE (#/L)        |    | 48                 | 213               |
| VASCULAR PLANT ABUNDANCE           |    |                    | Common            |
| SECCHI DISK TRANSPARENCY (m)       |    |                    | 2.5               |
| BOTTOM DISSOLVED OXYGEN (mg/L)     |    | 7.4                | 9.5               |
| BACTERIA (E. coli, #/100 ml)       | #1 |                    |                   |
|                                    | #2 |                    |                   |
|                                    | #3 |                    |                   |

SUMMER THERMAL STRATIFICATION:

weakly stratified

Depth of thermocline (m): None  
Hypolimnion volume (m<sup>3</sup>) : None  
Anoxic volume (m<sup>3</sup>) : None

**CHEMICAL:**

Lake: BACK LAKE

Town: PITTSBURG

|                               | 5 February 1997 |       | 6 August 1996 |  |       |
|-------------------------------|-----------------|-------|---------------|--|-------|
| DEPTH (m)                     | 1.5             | 3.0   | 1.0           |  | 3.0   |
| pH (units)                    | 6.7             | 6.5   | 7.2           |  | 7.2   |
| A.N.C. (Alkalinity)           | 17.2            | 16.6  | 13.4          |  | 13.4  |
| NITRATE NITROGEN              | 0.08            | 0.07  | 0.05          |  | 0.05  |
| TOTAL KJELDAHL NITROGEN       | 0.23            | 0.35  | 0.59          |  | 0.38  |
| TOTAL PHOSPHORUS              | 0.007           | 0.006 | 0.009         |  | 0.011 |
| CONDUCTIVITY ( $\mu$ mhos/cm) | 74.5            | 71.4  | 61.3          |  | 61.5  |
| APPARENT COLOR (cpu)          | 6               | 8     | 42            |  | 45    |
| MAGNESIUM                     |                 |       | 1.20          |  |       |
| CALCIUM                       |                 |       | 5.1           |  |       |
| SODIUM                        |                 |       | 4.9           |  |       |
| POTASSIUM                     |                 |       | 0.34          |  |       |
| CHLORIDE                      | 9               | 8     | 7             |  | 7     |
| SULFATE                       | 3               | 3     | 3             |  | 2     |
| TN : TP                       | 44              | 70    | 71            |  | 39    |
| CALCITE SATURATION INDEX      |                 |       | 2.3           |  |       |

All results in mg/L unless indicated otherwise

**TROPHIC CLASSIFICATION: 1996**

D.O. S.D. PLANT CHL TOTAL CLASS

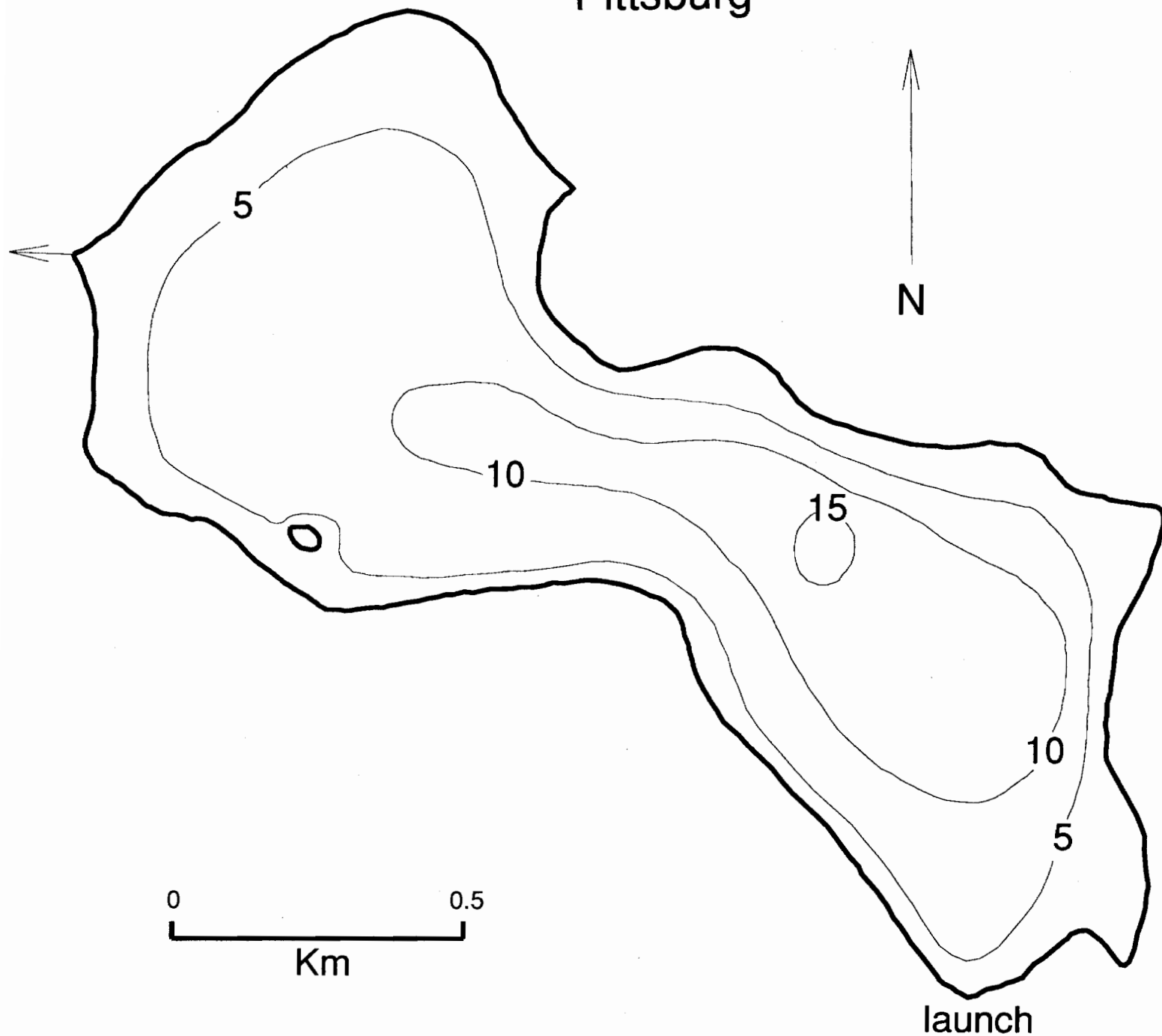
|    |   |   |   |   |       |
|----|---|---|---|---|-------|
| ** | 3 | 3 | 0 | 6 | Meso. |
|----|---|---|---|---|-------|

**COMMENTS:**

1. Back Lake was previously surveyed and classified in 1979 and 1985. There was no change in trophic classification over the 17 year period. The limited data suggest a trend of increasing phosphorus and decreasing water clarity, but no trend in chlorophyll. More frequently collected data is needed to confirm the trends.
2. *Anacystis*, a blue-green alga, was one of the dominant net phytoplankton during the summer. Blue-green are generally not desirable.
3. A motorboat speed limit exists for the pond.

# Back Lake

Pittsburg



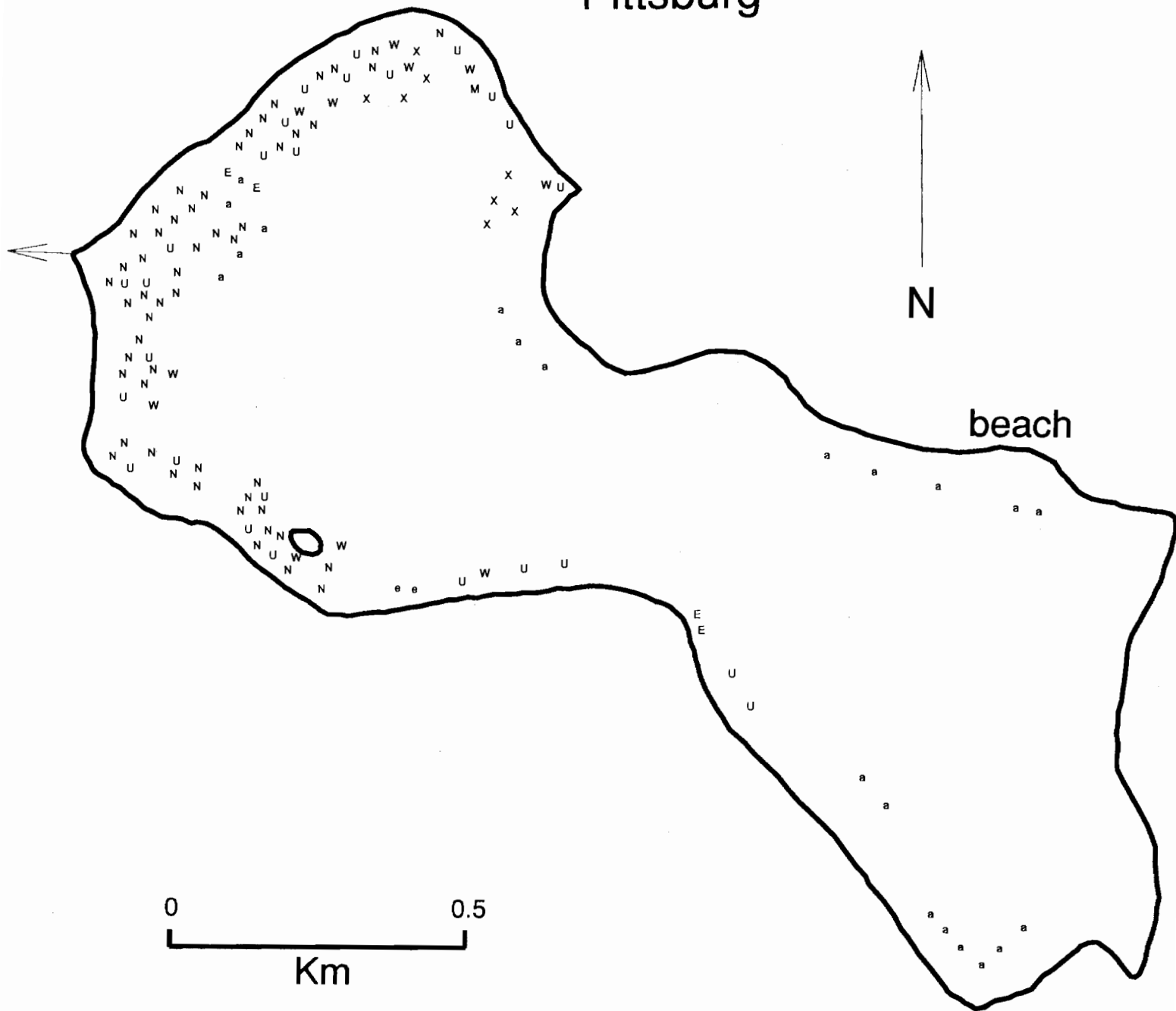
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**COMMENTS :**

\*Dissolved oxygen values are in mg/L

# Back Lake

Pittsburg



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